

WHAT IS CLAIMED IS:

1. A system for automatically managing Service Level Agreements comprising:
 - i. A database module for storing data related to the Service Level Agreements;;
 - ii. An engine module for processing said data from said database module; and
 - iii. A management module for managing said database module and said engine module.

2. The system of claim 1, further comprising a security layer for securing data generated by said database module, said engine module and said management module.

3. The system of claim 1, further comprising a reports generator for generating SLA reports based on said engine module.

4. The system of claim 1, wherein said management module includes:
 - A. A SLA Manager for creating and updating Service Level Agreements; and
 - B. An Infrastructure Manager for finding resources to be monitored for each customer with said Service Level Agreement.

5. The system of claim 1, wherein said engine module includes:
 - C. A SLA engine for generating maps of promised service level for a customer;
 - D. A CSL engine for processing measurements and events of said service level, as reported by Monitoring/ Operational tools; and
 - E. An Optimization Engine for supporting “what if” scenarios for optimizing the allocation of resources for said customer by an Application Service Provider.

6. The system of claim 1, wherein said database module includes:

F. A SLA database containing SLA definitions that target an amount of service level promised to a customer per a certain service domain, application and a certain time slot; and

G. A CSL database that contains Calculated measurements and events of said Services Level.

7. A tool for defining, monitoring and executing Service Level Agreements with customers, comprising:

i. A SLA Manager for creating and updating Service Level Agreements;

ii. A SLA database for containing definitions of said Service Level Agreements, that target an amount of service level promised to a customer; and

iii. A SLA engine for processing data in said SLA database.

8. The tool of claim 7, further comprising:

iv. At least one Monitoring/Operational Tool for monitoring Application Service Providers resources; and

v. A Monitoring/Operational Plug-in for translating measurement and events from said Monitoring/Operational tool into a uniform message and forwarding said message to a CSL engine.

9. The tool of claim 7, further comprising:

vi. A CSL engine for processing measurements and events reported by said Monitoring/Operational tools; and

vii. A CSL database that contains Calculated Services Level measurements and events calculated and aggregated by said CSL engine.

10. The tool of claim 7, further comprising:

viii. A Data Consolidator for processing information from said SLA engine and said CSL engine, and returning a deviation of given service from promised service, and a penalty declared for that deviation;

ix. A Reports Generator for producing reports based on information received from said SLA engine, said CSL engine and said Data consolidator; and

x. An Infrastructure Manager for enabling the tool for finding said Application Service provider resources; and

xi. An Optimization Engine for optimizing allocation of resources by an Application Service provider.

11. A method for enabling at least one Application Service Provider to manage a Service Level Agreement, comprising the following steps:

- i. setting up at least one production computer for executing data processing jobs;
- ii. setting up at least one computer console for extracting job performance data from said production computer;
- iii. setting up at least one production server, connected to said computer console, for storing said job performance data;
- iv. setting up at least one maintenance workstation for loading data pertaining to SLA's on said production server;

- v. setting up at least one client workstation for automating SLA monitoring and displaying actual performance of said data processing jobs, said SLA performance of jobs, problems, and impacts to downstream jobs to a user; and
- vi. setting up a local area network (LAN) for connecting said maintenance workstation and said client workstation to said production server.

12. The method of claim 11, wherein the managing of SLA's further comprises the step of setting up a Service Level Agreement Language of Measurement to operate on said production computer, said computer console, said production server, said maintenance workstation, said client workstation and said LAN.

13. The method of claim 12, wherein said setting up of Service Level Agreement Language of Measurement further comprises:

- A. ascribing at least one formulas for describing how to compute some service-level value from measurements collected by the ASP
- B. building a computational model of said formula; and
- C. constructing of said formula in memory.

14. The method of claim 13, further comprising the step of destructing said formula in memory.

15. A method for defining, monitoring and controlling a Service Level Agreement by means of a language, comprising the steps of:

- i. Defining grammar of a formula;

- ii. Defining the Semantics of said formula; and
- iii. Defining a hierarchy of classes of objects used to build a memory model that computes said formula.

16. The method of claim 15, wherein said memory model is built from said formula text, comprising the steps of:

- a. Parsing said formula text; and
- b. building a tree of objects representing said memory model of said formula.

17. The method of claim 16, wherein said memory model evaluates said formula during runtime of the system.